In the claims

Please amend claims 1, 3, 7, 8, 26, 27, 28, 39, 40, 46, 54, and 70-76 as follows:

Clean copy of all pending claims

1. (Amended) A method for treating a subject with a neurological disorder, or at risk of developing a neurological disorder comprising:

administering a vaccine comprising a therapeutically effective amount of an antigen, wherein the antigen elicits the production of antibodies in the circulatory system of the subject, or a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, wherein the antibodies bind to, and modify the function of a target protein in the central nervous system, to treat a neurological disorder in the subject.

2. The method of claim 1, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

3. (Amended) The method of claim 1, wherein the disorder is selected from the group consisting of epilepsy, stroke, Alzheimer's disease, Parkinson's disease, dementia, Huntington's disease, amyloid lateral sclerosis and depression.

5. The method of claim 1, wherein the neurological disorder is epilepsy.

6. The method of claim 1, wherein the vaccine comprises an antigen selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors, and cell surface molecules.

7. (Amended) The method of claim 6, wherein the antigen is an N-methyl-D-aspartate (NMDA) receptor.

8. (Amended) The method of claim 7, wherein the antigen is N-methyl-D-aspartate receptor subunit 1 (NMDAR1).

9. The method of claim 1, wherein the vaccine is selected from the group consisting of a viral vector vaccine, a DNA vaccine, a peptide vaccine and a crude antigen vaccine, or a combination thereof.

10. The method of claim 9, wherein the vaccine is a viral vector vaccine comprising a viral vector selected from the group consisting of an RNA viral vector and a DNA viral vector.

11. The method of claim 10, wherein the viral vector vaccine comprises a viral vector selected from the group consisting of an adenovirus vector, a herpes virus vector, a parvovirus vector, and a lentivirus vector.

12. The method of claim 11, wherein the viral vector is an adeno-associated virus vector.

22. A method for modifying the function of a target protein in the central nervous system of a subject comprising:

administering a vaccine comprising a therapeutically effective amount of an antigen, wherein the antigen elicits the production of antibodies in the circulatory system of the subject, or a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, wherein the antibodies bind to, and modify the function of a target protein in the central nervous system, to thereby modify the function of the target protein.

23. The method of claim 22, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

24. The method of claim 22, wherein the target protein is selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules,

enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell-surface molecules.

25. The method of claim 22, wherein the vaccine comprises an antigen selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules.

26. (Amended) The method of claim 25, wherein the antigen is selected from the group consisting of an N-methyl-D-aspartate (NMDA) receptor, a glutamate receptor (GluR), an neuropeptide Y (NPY), galanin, an neurokinin-1 receptor (NK-1), a dopamine transporter and glutamic acid decarboxylase.

27. (Amended) The method of claim 26, wherein the antigen is an N-methyl-D-aspartate (NMDA) receptor.

28. (Amended) The method of claim 27, wherein the antigen is N-methyl-D-aspartate receptor subunit 1 (NMDAR1).

29. The method of claim 22, wherein the vaccine is selected from the group consisting of a viral vector vaccine, a DNA vaccine, a peptide vaccine and a crude antigen vaccine, or a combination thereof.

30 The method of claim 29, wherein the vaccine is a viral vector vaccine comprising a viral vector selected from the group consisting of an RNA viral vector and a DNA viral vector.

31. The method of claim 30, wherein the viral vector vaccine comprises a viral vector selected from the group consisting of an adenovirus vector, a herpes virus vector, a parvovirus vector, and a lentivirus vector.

32. The method of claim 31, wherein the viral vector is an adeno-associated virus vector.

36. A method for improving cognition in a subject comprising:

administering a vaccine comprising a therapeutically effective amount of an antigen, wherein the antigen elicits the production of antibodies in the circulatory system of the subject, or a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, wherein the antibodies binds to, and modify the function of a target protein in the central nervous system, to thereby improve cognition of a subject.

37. The method of claim 36, wherein the antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

38. The method of claim 36, wherein the vaccine comprises an antigen selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules.

39. (Amended) The method of claim 38, wherein the antigen is an N-methyl-D-aspartate (NMDA) receptor.

40. (Amended) The method of claim 39, wherein the antigen is N-methyl-D-aspartate receptor subunit 1 (NMDAR1).

41. The method of claim 36, wherein the vaccine is selected from the group consisting of a viral vector vaccine, a DNA vaccine, a peptide vaccine and a crude antigen vaccine, or a combination thereof.

42. The method of claim 41, wherein the vaccine is a viral vector vaccine comprising a viral vector selected from the group consisting of an RNA viral vector and a DNA viral vector.

43. The method of claim 42, wherein the viral vector vaccine comprises a viral vector selected from the group consisting of an adenovirus vector, a herpes virus vector, a parvovirus vector, and a lentivirus vector.

44. The method of claim 43, wherein the viral vector is an adeno-associated virus vector.

45. The method of claim 36, wherein the target protein is selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors and transcription factors.

46. (Amended) The method of claim 45, wherein the target protein is an N-methyl-D-aspartate (NMDA) receptor.

54. (Amended) A method for treating a subject with a neuroendocrine disorder, or at the risk of developing a neuroendocrine disorder comprising:

administering a vaccine comprising a therapeutically effective amount of an antigen to a subject, wherein the antigen elicits the production of antibodies in the circulatory system of the subject, or a composition comprising a therapeutically effective amount of an isolated antibody, or an antibody portion, wherein the antibodies bind to, and modifies the function of a target protein in the central nervous system, to thereby treat the neuroendocrine disorder in the subject.

59. The method of claim 54, wherein the vaccine is selected from the group consisting of a viral vector vaccine, a DNA vaccine, a peptide vaccine and a crude antigen vaccine, or a combination thereof.

60. The method of claim 59, wherein the vaccine is a viral vector vaccine comprising a viral vector selected from the group consisting of an RNA viral vector and a DNA viral vector.

61. The method of claim 60, wherein the viral vector vaccine comprises a viral vector selected from the group consisting of an adenovirus vector, a herpes virus vector, a parvovirus vector, and a lentivirus vector.

68. The method of claim 54, wherein the target protein is selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules.

70. (Amended) A composition comprising a therapeutically effective amount of an antigen capable of eliciting the production of antibodies in the circulatory system of the subject, or a therapeutically effective amount of an isolated antibody, or an antibody portion, wherein the antibodies bind to, and modify the function of a target protein in the central nervous system.

71. (Amended) The composition of claim 70, wherein antibodies pass across the blood-brain barrier into the central nervous system facilitated by injury, disease or excessive neuronal activity.

72. (Amended) The composition of claim 71, wherein the antigen selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors, transcription factors and cell surface molecules.

73. (Amended) The composition of claim 72, wherein the antigen is an N-methyl-D-aspartate (NMDA) receptor.

74. (Amended) The composition of claim 73, wherein the antigen is N-methyl-D-aspartate receptor subunit 1 (NMDAR1).

75. (Amended) The composition of claim 70, wherein the target protein is selected from the group of neurotransmitters, neuroreceptors, transporters, ion channels, signal transduction molecules, enzymes involved in the synthesis or degradation of neurotransmitters, growth factors and transcription factors.

76. (Amended) The composition of claim 75, wherein the target protein is an NMDA receptor.